

REMARKS

Claims 1-7 have been canceled without prejudice/disclaimer to the subject matter embodied thereby, and new claims 8-14 have been added and are submitted to be patentable over the cited prior art.

Claim 1-6 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bardos et al. ‘632 (“Bardos”) in view of Hester ‘704 (“Hester”) and Fujiyoshi et al. ‘140 (“Fujiyoshi”). It is respectfully submitted that none of the cited prior art, alone or in combination, disclose or suggest each and every limitation recited in new claim 8.

Claim 8 recites in pertinent part, “two or more switching power supplies are connected to an input power supply *so that the capacitors are connected in series*, output voltages generated by the two or more switching power supplies *are outputted to a common output terminal*, and the control circuit switches the plurality of switching elements in the plurality of switching power supply units at regular intervals” (emphasis added). The Examiner relies exclusively on Bardos as allegedly disclosing the claimed capacitor/switching power supply combinational arrangement. The Examiner relies on the elements within output circuits 20 and 20’ to read on the claimed plural switching power supplies. However, the alleged plural switching power supplies of Bardos are merely independent output circuits and are not configured so “that the capacitors are connected in series [and] output voltages generated by the two or more switching power supplies are outputted to a common output terminal” as recited in claim 8

First, as shown in Figure 1 of Bardos, capacitors 22 and 23 at the input of circuit 20 and the two unnumbered capacitors at the input of circuit 20’ are connected *in parallel*.

Second, as clearly evident from Figure 1 of Bardos, each circuit 20 and 20’ has its own independent output terminal. Indeed, Bardos expressly discloses:

[r]eferring firstly to FIG. 1 of the drawings, the system illustrated comprises an inverter 10 energized from an a.-c. supply and arranged to feed a plurality of ***mutually isolated*** output circuits, of which two only are shown at 20 and 20'. (emphasis added).

The Examiner has appeared to overlook this feature of the present invention, as he does not appear to address in the Office Action the common output terminal of the present invention. In this regard, one feature of the present invention is directed to the combination of using plural power supplies with a common output terminal, as opposed to a conventional single power supply illustrated in the admitted prior art (Figure 5 of Applicants' drawings). Bardos would appear to be, at best, cumulative to the conventional Figure 5 configuration but with the simple difference of having additional *independent* power supplies. Indeed, as described on page 24, lines 12-19 of Applicants' specification, such a configuration can make it possible to cancel/reduce ripples in the current so as to increase output stability.

Third, the alleged switching elements 14 and 15 of Bardos are not provided for each of the alleged switching power supplies as in the present invention but rather are commonly used by the alleged switching power supplies 20, 20'.

Lastly, the Examiner admits that Bardos does not disclose the claimed transformer construction and relies on Hester and Fujiyoshi to modify Bardos by including their respective transformers. However, even assuming *arguendo* Hester and Fujiyoshi disclose the claimed transformer construction, it is respectfully submitted that the Examiner's alleged motivation for making the combination is improper. Specifically, the Examiner alleges that the combination would be obvious to provide "an improved power supply with increased efficiency and cost effectiveness" (*see* page 3, lines 1-3 of outstanding Office Action). However, the Examiner's motivation was not derived from the prior art, nor from general knowledge in the art, but rather appears to be based on the Examiner's own opinion. Both Hester and Fujiyoshi's disclosed

transformers are conventional designs selected without any specific motivation for the particular transformer.

Nonetheless, it is respectfully submitted that the particular transformer in *combination* with the power supply unit of the present invention provides a significant improvement over conventional design. As described throughout Applicants' specification, one of the effects that can be realized by the novel structural arrangement recited in claim 8 is making it possible to miniaturize the transformer (*see, e.g.*, page 25, line 7 – page 28, line 7 of Applicants' specification). Indeed, according to conventional designs in which a common output terminal is not provided (as in Bardos), the turn ratio of the transformer is high and the number of layers is great. Moreover, conventional transformers using multilayer coils are subject to increased noise transmission because of stray capacitance. The novel structural arrangement recited in claim 8 makes it further possible to reduce the amplitude of voltage to be applied on the primary side so as to reduce the noise source itself. More specifically, even with a multilayer board or a stack of planar conductors having a large stray capacity, less noise is transmitted through the windings, thereby achieving a highly stable switching power supply unit (*see* page 28, lines 1-7 of Applicants' specification). None of the cited prior art recognizes nor considers the aforementioned drawbacks, let alone suggest the novel *combination* recited in claim 8 and conceived by Applicants to enable obviating said drawbacks.

The Examiner is directed to MPEP § 2143.03 under the section entitled "All Claim Limitations Must Be Taught or Suggested", which sets forth the applicable standard for establishing obviousness under § 103:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (citing *In re Royka*, 180 USPQ 580 (CCPA 1974)).

In the instant case, the pending rejection does not "establish *prima facie* obviousness of [the] claimed invention" as recited in claim 8 because the proposed combination fails the "all the claim limitations" standard required under § 103.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 8 is patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable. In addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination.

Based on the foregoing, it is respectfully submitted that all pending claims are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejection under 35 U.S.C. § 103 be withdrawn.

CONCLUSION

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

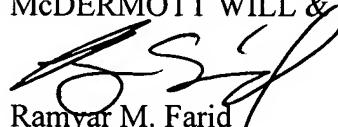
To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

Application No.: 10/549,927

including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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